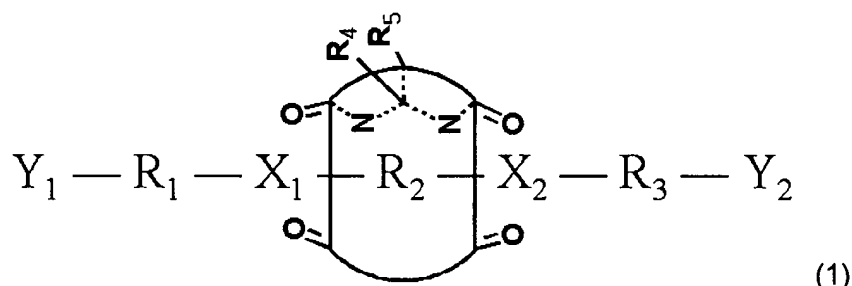


Amendments to the Claims:

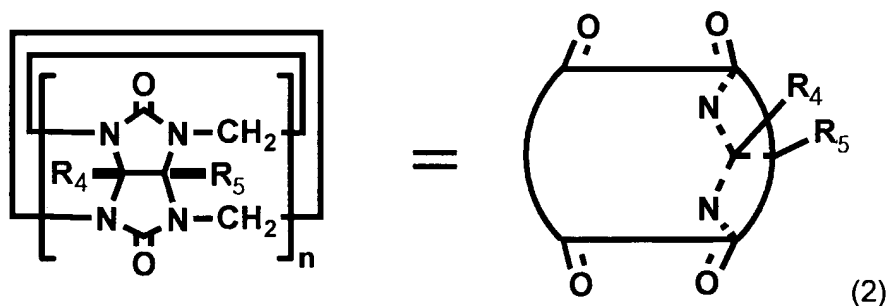
This listing of claims will replace all prior versions, and listings, of claims in the application:

What is claimed is:

1. (Original) A compound represented by Formula 1 below in which a compound of Formula 3 below vertically passes through a cavity of cucurbituril or its derivative of Formula 2 below:

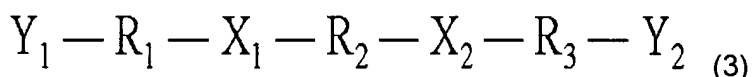


wherein R_1 , R_2 , and R_3 are each independently saturated or unsaturated linear C_2 - C_{10} alkylene, ethyleneglycol oligomer, 1,4-substituted benzene, or 1,4-substituted pyridine; X_1 and X_2 are each independently a positively charged functional group for ion-dipole interaction with an oxygen atom of cucurbituril or its derivative of Formula 2; Y_1 is a functional group for a linkage with a biomaterial comprising a gene or a protein; and Y_2 is a functional group for a linkage with a solid substrate,



wherein n is an integer of 4 to 20; and R_4 and R_5 are each independently hydrogen, an alkenyloxy group with an unsaturated bond end

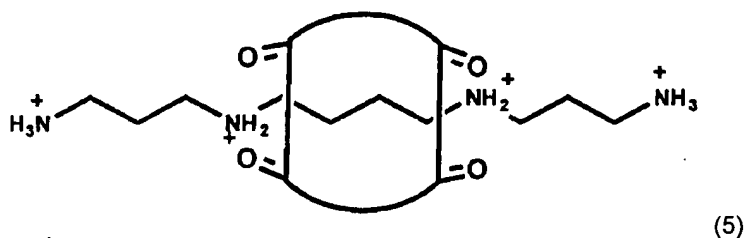
and a substituted or unsubstituted alkyl moiety of C₁-C₂₀, a carboxyalkylsulfinyloxy group with a substituted or unsubstituted alkyl moiety of C₁-C₂₀, a carboxyalkyloxy group with a substituted or unsubstituted alkyl moiety of C₂-C₈, an aminoalkyloxy group with a substituted or unsubstituted alkyl moiety of C₂-C₈, or a hydroxyalkyloxy group with a substituted or unsubstituted alkyl moiety of C₂-C₈, and

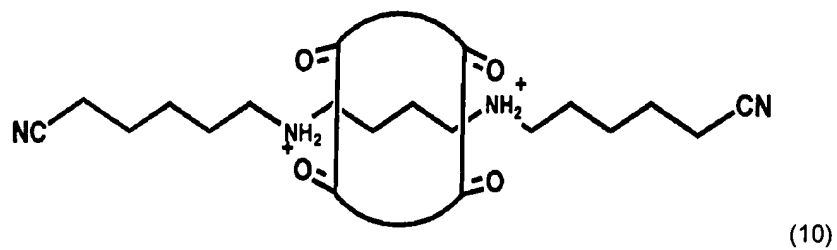
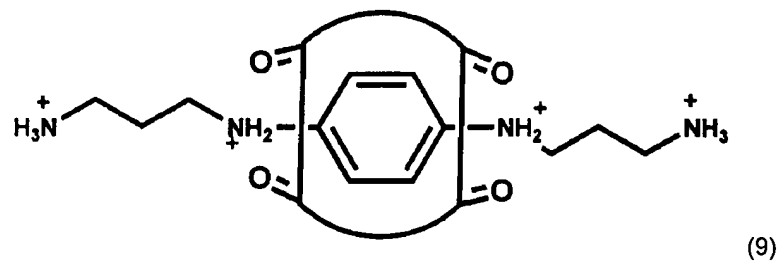
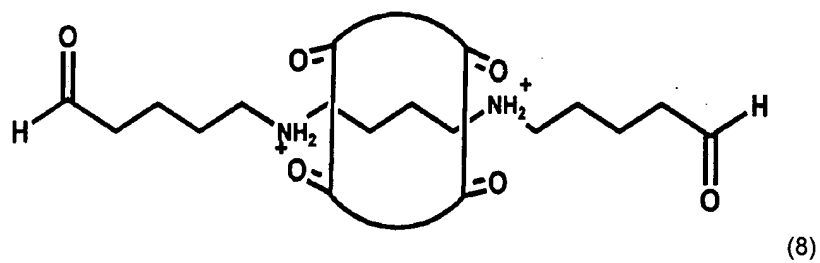
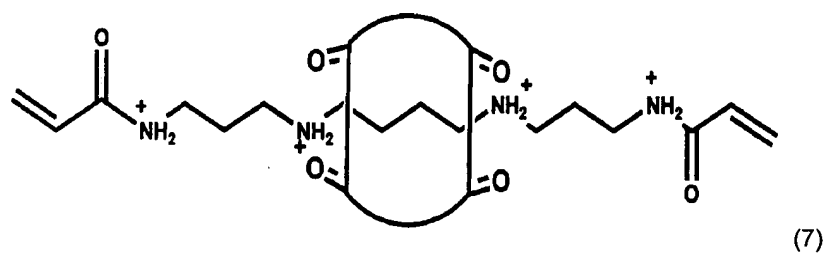
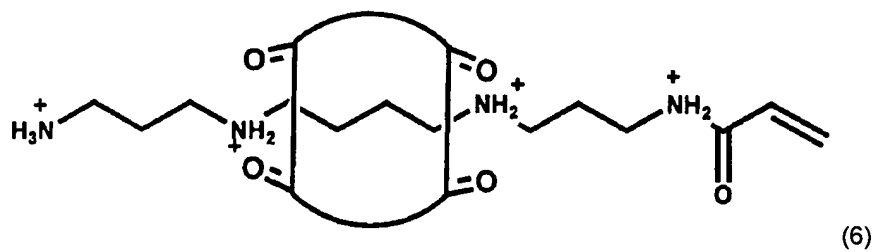


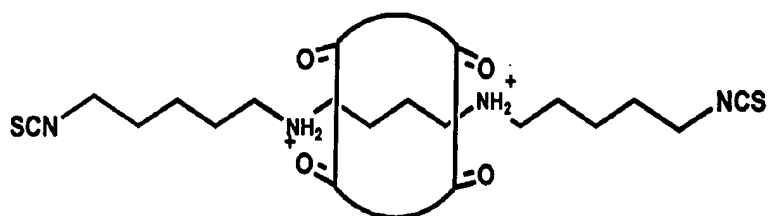
wherein R₁, R₂, R₃, X₁, X₂, Y₁, and Y₂ are as defined in Formula 1 above.

2. (Original) The compound of claim 1, wherein X₁ and X₂ are each independently secondary ammonium, 1,4-substituted pyridinium, or benzyl ammonium; and Y₁ and Y₂ are each independently a primary amine group, an amide group, an acrylamine group, an alkylester group, an aldehyde group, a carboxyl group, an alkoxysilane group, a halogenated acyl group, a hydroxyl group, a thiol group, a halogen group, a cyan group, an isocyan group, or an isothiocyan group.

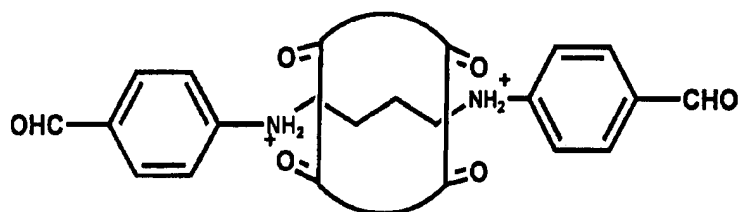
3. (Original) The compound of claim 1, which is selected from the group consisting of compounds represented by Formulae 5 through 13:



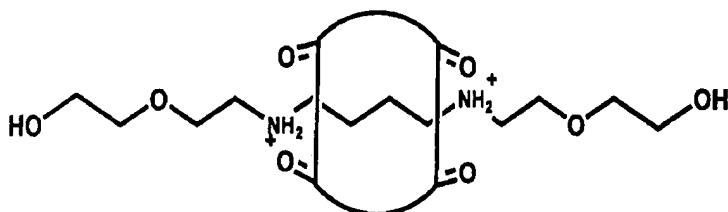




(11)



(12)



(13)

4. (Original) A solid substrate bonded with a compound of Formula 1 via a covalent bond or a non-covalent bond.

5. (Original) The solid substrate of claim 4, wherein the compound of Formula 1 is present in a density of 0.05 to 0.6 compounds/nm².

6. (Original) The solid substrate of claim 4, which is a glass, a silicon wafer, an indium tin oxide (ITO) glass, an aluminum oxide substrate, or a titanium dioxide substrate.

7. (Currently Amended) A gene chip comprising the solid substrate of ~~any one of claims 4 through 6~~ claim 1.

8. (Currently Amended) A protein chip comprising the solid substrate of ~~any one of claims 4 through 6~~ claim 1.

9. (Currently Amended) A sensor for biomaterial assay comprising the solid substrate of ~~any one of claims 4 through 6~~ claim 1.